

**2<sup>nd</sup> Asia workshop on Superconducting Gravimetry – Arun Gupta, Institute of Seismological Research (ISR), Gandhinagar, Gujarat (Email: akg\_mgs@yahoo.com)**

The workshop was jointly organized by Department of Civil Engineering, National Chiao Tung University, Taiwan; Industrial Technology Research Institute, Taiwan and Global Geodynamics Project, during June 20-22, 2010, at International Association of Geodesy, Taipei in Taiwan. About 45 delegates from USA, Japan, China, Australia, Taiwan, Tahiti, Norway and India attended the conference and participated in the deliberations on wide range of topics mainly dealing on superconducting gravimetry. The first day of the conference began with the tour of Taiwan site scene.

On the second day, Minister of the Ministry of Interior and advisor of National Science Council, Taiwan, highlighted the importance of gravity data and their analysis. Xu House, China Academy of Sciences, expressed his desire for young scientists to be fully involved in development of new methodology for superconducting gravimeter (SG) data analysis in integrated manner. Benjamin Fong Chao from National Central University, Taiwan gave his valuable remarks on importance of SG. In his welcome address Cheinway Hwang, convenor of the conference, hoped that the conference would provide a platform to exchange ideas to handle problems related to superconducting gravimetry. The conference was conducted in six technical sessions, where 24 oral and 2 poster papers were presented.

In session-1: *Earth rotation and superconducting gravimeter*: the key note address of David Crossley, Saint Louis University, emphasized the goal of GGP network of SGs. 3D normal modes of the earth, Earth's core mode such as Slichter triplet and detection of slow and silent earthquakes were presented. Arun Gupta, ISR, India, presented the preliminary results of Gujarat SG, earth's free oscillations and

various instruments, status of Multi-parametric Geophysical observatories. Benjamin F. Chao, highlighted the importance of slichter mode. Emmy T.Y Chang, National Taiwan University, presented the observations of some vibrations of ocean-excitation microseisms in SG before 4-8 sec during earthquake.

In session 2, *Gravimetry and seismology*: B.R. Arora, WIHG, India, stressed the quantification and reductions of different gravity effects prior to the residual fields which can be searched to isolate the earthquake precursors. WenBin Shen, Wuhan University (WU), China, discussed the gravity anomaly signals prior to large earthquakes. Digin Wang, WU, presented the investigation of long period seismic modes and frequency spectral splitting phenomena caused by 2004 Sumatra earthquake (Mw 9.3) and 2001 Peru earthquake (Mw 8.4) of 6SG of GGP network. Ching Chung Cheng, NCTU, presented the results of pre and post seismic gravity changes of seismic deformation using the absolute gravimeter network. Kazuo Shibuya, National Institute of Polar Research (NIPR), Japan, presented the analysis of OS0 mode by the Chilean earthquake 2010.

Session 3, *Status reports of SG projects*: Cheinway Hwang, NCTU, explained the need of gravity monitoring using superconducting, absolute, airborne/shipborne and relative gravimeter. Jean Pierre Barriot, International Centre for Earth Tides (ICET), Tahiti, explained the activities of ICET related to GGP. Ove Christian Dahl Omang, Geodetic Institute, Norway, discussed the increase in rate of gravity change of Svalbard Island during the period between 2000-2008.

In session 4, *New developments in gravimetry*: R.J. Warburton, GWR, USA,

presented the new GWR portable model iGravTM which is easy to use, less expensive and similar with many characteristics of GWR Observatory SG. Chung Liang Lo, NCU, presented the earthquake induced earth oblateness variation for the past forty years. Yuichi Aoyama, NIPR, Japan presented the SG status of Syowa station in Antarctica.

In session 5, *Hydrology and data processing*: Tadahiro Sato, Tohoku University, Japan discussed the problem of viscoelastic structure of the earth at Southeast Alaska (SE-AK) using two gravimeters gPhone#32 and LaCoste-Romberg G578. Jean Pierre Barriot, ICET, Tahiti discussed the identification and removing of outliers and jumps in SG time series. Jiangcun Zhou, IGG, China has presented the comparison of SG and GPS data with Gravity Recovery and Climate experiment (GRACE) satellites. Yoshiaki Tamura, NAO, Japan presented the collocated geodetic observations with SG, VLBI and GPS. Haoming Yan, IGG, China presented the gravity and GPS data of Jiufeng station of China.

In session 6, *Atmospheric and tidal effects*: Miao Hsiang Peng, ITRI, presented the correlation between residual gravity and local rainfall of Hsinchu station (H.S). Ricky Kao, NCTU, presented the effects of atmospheric loading on SG data of HS. Shaocong Luo, IGG, China presented the tidal gravity residuals during 22 July 2009 total solar eclipse.

In the concluding session David Crossley, SLU, USA presented the status of GGP data and problem associated with data processing and discussed about the data sharing. R.J. Warburton, GWR, USA discussed the problems associated with SG data analysis. The conference ended with vote of thanks by Chienway Hwang.